

DYSTOVOMITA, A NEW GENUS OF NEOTROPICAL GUTTIFERAE¹

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ABSTRACT

Because of its distinctive placentation, axillary structures, and unusual inflorescence structure, Engler's *Tovomita* sect. *Dysovomita* is raised to generic level. The new genus now consists of three species [*D. brasiliensis* D'Arcy, *D. clusiifolia* (Maguire) D'Arcy, *D. pittieri* (Engler) D'Arcy], the first newly described.

Dystovomita (Engler) D'Arcy, gen. nov.

Tovomita sect. II *Dystovomita* Engler, Bot. Jahrb. Syst. 58, Beibl. 130: 8. 1923. TYPE: *Tovomita pittieri* Engler = *Dystovomita pittieri* (Engler) D'Arcy.

Glabrous dioecious *trees*. *Leaves* opposite, entire, the costa prominent, the lateral veins slightly arcuate, evenly spaced, the minor venation inconspicuous; petioles stout; axillary structures drying hard, dark, conspicuous. *Inflorescences* lateral on the stems or terminal, sessile, fascicled, cymose panicles; minute bracts and bracteoles present. *Flower* buds globose or ovoid; sepals 2–4, the outer pair sometimes reduced to minute appressed scales (?bracts), the inner pair imbricate or fused in bud, opposite, decussate; petals 4, imbricate and overtopping the bud; stamens numerous, the filaments free or appearing as if in fascicles, the anthers terminal, 2-lobed along the sides of the filament apex, 4-loculed; ovary 3–5-locular, the styles short or wanting, reflexed over the ovary, the stigmas ligulate or spatulate, adaxial and hence facing outwards from the ovary, the ovules 1–2 per locule, pendant, axile, the funiculus affixed to the upper $\frac{3}{4}$ of the placental column, the second ovule when present partly superposed. *Fruit* a small apically dehiscent berry, the outer bracts persistent but the other perianth parts deciduous; seeds faboid, striate, exarillate with a convex, discoid, hard caruncle.

- a. Flower buds ovoid with a sharp point; inflorescences arising on slender twigs; Brazilian species 1. *D. brasiliensis*
- aa. Flower buds globose, blunt topped; inflorescences arising on stout branches or twigs; Venezuelan or Central American species.
 - b. Outermost perianth consisting of 2 sepals (bracts) less than $\frac{1}{4}$ as long as the bud; pedicels mostly lacking bracteoles; Venezuelan species 2. *D. clusiifolia*
 - bb. Outermost perianth consisting of 2 sepals nearly as long as the bud; pedicels mostly with 2 bracteoles on the lower half; Central American species 3. *D. pittieri*

1. *Dystovomita brasiliensis* D'Arcy, sp. nov.

Arbor, foliis ellipticis vel ovatis coriaceis; alabastris ovoideis, e bracteolis oblongis deciduis emergentibus.

Tree 15 m tall; trunk 15 cm in diam.; twigs slender, subterete or compressed, drying smooth but minutely sulcate, reddish brown. *Leaves* coriaceous, broadly

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elliptical or obovate, ca. 15 cm long, 8 cm wide, the costa prominent, raised rounded beneath, the lateral veins ca. 10 on each side, arcuate at the margin but not forming a submarginal vein, not loop connected, obscure above, prominent beneath, the minor venation of weak but continuous intermediate lateral veins especially upwards, and strongly ascending secondary lateral veins pinnate from many of the main lateral veins, drying discolorous, slatey above, reddish beneath; petioles 2–3 cm long; pseudostipules widely spreading, 5–6 mm long. *Inflorescences* lateral on the twigs or terminal, fascicles of short, somewhat congested cymose panicles, sometimes umbellate, to 7 cm tall; peduncles sharply compressed; pedicels sharply compressed, ca. 8 mm long. *Flower* buds ovoid, emerging from oblong, costate, deciduous, completely fused bracteoles ca. 2 mm long, minutely ciliolate, the sepals completely fused in bud, the tips coming to a sharp point.

TYPE: BRAZIL. AMAZONAS, Mun. São Paulo de Olivença, basin of creek Belem, tree 50 ft high, trunk 6 inches in diam., tierra firma, high forest, *Krukoff* 8714 (MO, holotype).

This species is known only from the type collection which is in bud. The leaf shape, pseudostipules, inflorescence, and appearance of the bud identify this as a member of *Dystovomita*.

2. *Dystovomita clusiifolia* (Maguire) D'Arcy, comb. nov.

Chrysochlamys clusiaefolia Maguire, Bol. Soc. Venez. Ci. Nat. 25: 225, pl. 1. 1964. TYPE: Venezuela, *Steyermark & Farinas* 90941 (NY, holotype not seen; VEN, isotype).

VENEZUELA. FEDERAL DISTRICT: between Limón and Colonia Tovar, 1500 m, *Steyermark & Maguire* 60030 (US), 60031 (MO). FALCÓN: Montaña de Paraguariba 5 km al Este del Hotel Parador, Sierra de San Luis, 1300 m, *Steyermark* 99314 (US).

3. *Dystovomita pittieri* (Engler) D'Arcy, comb. nov.—FIG. 1.

Tovomita pittieri Engler, Bot. Jahrb. Syst. 58, Beibl. 130: 8. 1923. TYPE: Costa Rica, *Pittier* 16094 (B, not seen; US, isotype).

Chrysochlamys clusiaefolia subsp. *panamaensis* Maguire, Phytologia 36: 395. 1977. TYPE: Panama, *Gentry & Mori* 13769 (MO).

The two Colombian collections cited below are in fruit; they may be specifically distinct from *D. pittieri*.

COSTA RICA. Montagne de Tuis, 1000 m, *Pittier* 16094 (US). Cloud forest above Wilson's finca 6 km S of San Vito de Java, 5000 ft, *Raven* 21791 (MO).

PANAMA. Cerro Mali base camp, Colombian border, 1400 m, *Gentry & Mori* 13769 (MO). Elfin forest, Cerro Caracoral, 1000 m, *Duke & Dwyer* 15102 (MO).

COLOMBIA. Hills behind logging camp below first rapids on Río Truando, 40–200 m, *Duke* 13320 (MO). Top of Serrania del Darién E of Unguia, 1400 m, *Gentry et al.* 16775 (MO).

The difficulties of separating the clusioid genera *Tovomita*, *Tovomitopsis*, and *Chrysochlamys* have been alluded to by Maguire (1964, 1977) and others, and the solution taken by Standley & Williams (1961) to combine them all may be correct. These genera are close relatives of *Clusia*, but they have few ovules, only 1 or 2 in each of the 3–6 locules. The venation patterns differ somewhat as well, for there is a strong costa and distinct, evenly spaced pinnate venation on each side of it. In *Clusia* the ovules are mostly numerous, and the venation pattern

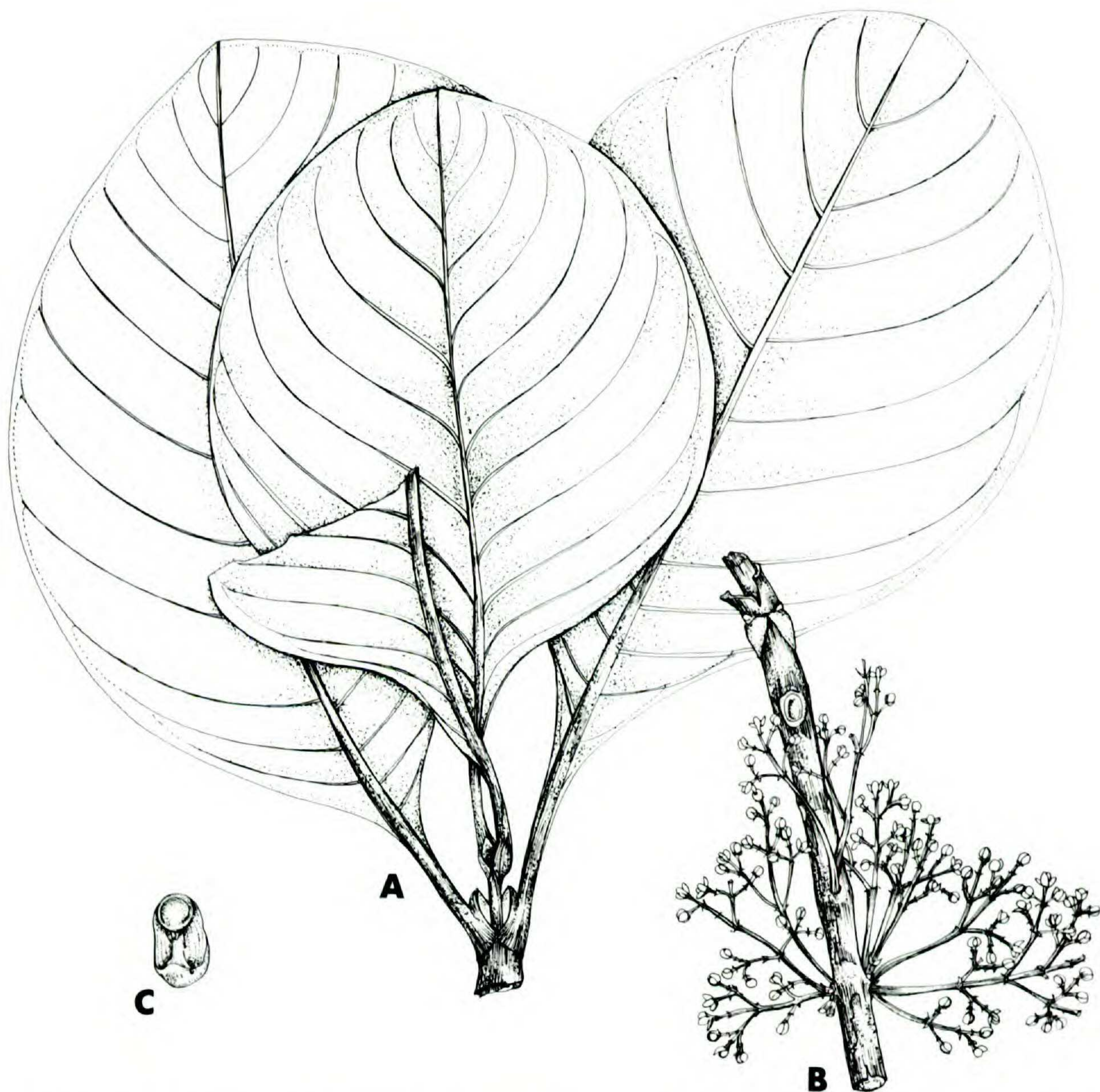


FIGURE 1. *Dystovomita pittieri* (Engler) D'Arcy—A. Habit. Note conspicuous axillary structures ($\times \frac{1}{2}$).—B. Inflorescence ($\times \frac{1}{2}$). [After Gentry & Mori 13769 (MO).]—C. Seed. Note discoid caruncle ($\times 4$). [After Duke & Dwyer 15102 (MO).]

tends to be of strongly ascending, closely spaced veins from a costa which is conspicuously attenuate towards the apex. The three genera noted above have been separated on characters of the seed aril or ariloid and on the prefloration of the bud. In addition, *Chrysochlamys* is supposedly distinct in having 5-merous flowers, while *Tovomita* has 2- or 4-merous flowers. In all published information I have seen and in the ovaries I have opened, these genera have ovules which are basifixed and ascending or medifixed. Maguire (1977) characterized *Chrysochlamys* as having a cauliflorous inflorescence, but this appears to be a variable character; the original illustration of the type species, *C. multiflora* Poeppl. & Endl. shows a terminal inflorescence, and in the material I have seen labeled *Chrysochlamys*, inflorescences are only sometimes lateral on young twigs, not appearing to arise from stems of some maturity as the term cauliflorous usually connotes.

In the species of *Dystovomita* the venation patterns are like those in *Tomovita*, *Tovomitopsis*, and *Chrysochlamys*, and there are only 1 or 2 ovules per locule. However the ovules are pendant, affixed high on the abaxial side, and the testa has lines of tubercles, not veins, which are longitudinally oriented without respect to the hilum. In the case of two of the species, the inflorescence is cauliflorous on mature wood. The fruit is a globose, ellipsoid, or ovoid berry much smaller than is usual in the other genera, and within it there is no sign of an aril. The seeds are longitudinally lined by minute raised dots, and the discoid caruncle is hard, not at all fleshy.

Interpretation of the perianth presents some difficulty. In *Dystovomita pittieri* the pedicel bears two minute bracteoles on the lower half, much as in many species of *Tovomita*, but in *D. clusiifolia* these are borne at the base of the flower. Because I believe these bracts to be homologous with the outer sepals of many species of *Tovomita*, I refer to them as sepals. It is not surprising then that the two species have different numbers of sepals, *D. pittieri* having 2 sepals and 4 petals plus a pair of bracteoles low on the pedicels, and *D. clusiifolia* having 4 sepals and 4 petals but no bracteoles on the lower pedicel. But in each case, the petals are enclosed apically by only one pair of sepals, a situation rare in *Tomovita*, *Tovomitopsis*, and *Chrysochlamys*. In *D. brasiliense* there are deciduous bracteoles, and the outer sepals are completely fused, as in many species of *Tovomita*.

One conspicuous feature of dried specimens of *Dystovomita* is the lignified, stout, axillary structures which appear in each axil and which can also be seen at the apices of the stems between the last-emerged leaves. Similar structures are reported in other genera of Guttiferae but not in the *Tovomita* group of genera. The morphological identification of these structures is uncertain; they may be stipules (rare in the family), axillary buds, or enations of the petiole.

Field notes indicate that members of this genus lack the stilt roots common in other species of the *Tovomita* group, and that there is little or no milky sap, also a common characteristic of the Guttiferae.

LITERATURE CITED

- MAGUIRE, B. 1964. Three new Guttiferae for Venezuela. *Bol. Soc. Venez. Ci. Nat.* 25: 226–230.
- . 1977. Notes on the Clusiaceae—Chiefly Panama. I. *Phytologia* 36: 391–407.
- STANDLEY, P. & L. O. WILLIAMS. 1961. Guttiferae. In P. Standley & L. O. Williams, *Flora of Guatemala*, *Fieldiana Bot.* 24(7): 36–61.